

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY 4 - DEM/VAL			PE NUMBER AND TITLE 0603790A - NATO RESEARCH AND DEVELOPMENT						PROJECT 691	
COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
691 NATO RSCH & DEVEL	1808	1902	8633	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

This program implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States, the North Atlantic Treaty Organization (NATO), and U.S. major non-NATO allies. This program element only funds the U.S. equitable share of the cooperative R&D project spent in the U.S. Projects are implemented with the allied partners through international agreements which define the scope, cost and work sharing arrangements, management, contracting, security, data protection and third party transfers. By technology sharing the program jointly develops equipment with our allies to improve operational efforts by achieving multi-national force compatibility through the use of similar equipment and improved interfaces. Funds support all the R&D costs including the identification of cooperative opportunities and administration of the program. All funds are used to pay for the U.S. work share in the United States at U.S. Government and U.S. contractor's facilities. This program focuses on international cooperative technology demonstration, validation, and interoperability of the Battlefield Combat Identification System, Force XXI Battle Command Brigade and Below (FBCB2)/Appliqué Systems, Adaptive Digital Beamforming for THAAD radars, helicopter helmet mounted displays, military network switching, Patriot Tactical Operations Center, improved combat vehicle propulsion, missile seeker electronic countermeasures, eyesafe laser radar, artillery command and control, standoff chemical detectors, kinetic energy penetrators, and signal jamming subsystems. The final program will be reported separately as required by 10 USC 2350a(f).

FY 2000 Accomplishments

- 1180 Artillery System Cooperation Activities (ASCA) (Partners: France, Germany, United Kingdom): Developed common interface requirements for Allied Field Artillery Command and Control Systems and conducted field demonstration(s) for interoperability between AFATDS and Allies' systems.
- 328 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
- 300 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2000 Report to Congress on the International Cooperative Research and Development Program.

Total 1808

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**June 2001**BUDGET ACTIVITY
4 - DEM/VALPE NUMBER AND TITLE
**0603790A - NATO RESEARCH AND
DEVELOPMENT**PROJECT
691**FY 2001 Planned Program**

- 1006 Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continue integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extends the effort into a sustainable program to incorporate lessons learned into national systems. Extends participation to include Canada and Italy.
 - 410 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
 - 310 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2001 Report to Congress on the International Cooperative Research and Development Program.
 - 120 Intense Laser Pulse Propagation in the Atmosphere (ILPPA) (Partner: Canada): Will jointly develop a solution to the problem of transporting intense laser pulses over long distances in the atmosphere to induce strong non-wavelength specific fluorescence on target for remote sensing. Will conduct experiments to validate propagation mostly in Canada, and conduct simulation and modeling in the U.S.
 - 56 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
- Total 1902

FY 2002 Planned Program

- 1043 Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continue integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extends the effort into a sustainable program to incorporate lessons learned into national systems.
- 630 TACJAM-A Electronic Support Subsystem Upgrades (Partner: United Kingdom): Continue development of an advanced penetrator, and potentially a common cartridge, to defeat modern tanks equipped with Kinetic Energy - Explosively Reactive Armor.
- 500 Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Characterize and assess advanced focal plane array missile seekers and develop electronic countermeasures (ECM) to defeat them through simulation, modeling, and lab testing.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

FY 2002 Planned Program (Continued)

- 410 Electro-thermal Chemical (ETC) Gun Technologies for Future Military Vehicle Systems (Partner: Germany): Seeking to jointly advance ETC gun technologies, and demonstrate feasibility of future large caliber ETC guns. Will be conducted based on sub-scale and full-scale experimental results and analysis tools.
 - 120 Intense Laser Pulse Propagation in the Atmosphere (ILPPA) (Partner: Canada): Will jointly develop a solution to the problem of transporting intense laser pulses over long distances in the atmosphere to induce strong non-wavelength specific fluorescence on target for remote sensing. Will conduct experiments to validate propagation mostly in Canada, and conduct simulation and modeling in the U.S.
 - 1500 Techniques for Active Defense (TAD) (Partner: United Kingdom): Cooperative efforts to define short-range air and missile defense requirements to include generic threat definition and defended footprint parameters. Will cooperatively develop and evaluate a point design, and SMDC is also designing and fabricating a testbed.
 - 400 Simulation and Command and Control (C2) Information System Connectivity Experimentation (SINCE) (Partner: Germany): Defining and demonstrating a generic solution for interfacing and networking Brigade/Battalion (BDE/BN) Command and Control Information Systems (C2IS) and applicable Modeling and Simulation (M&S) systems as required to support Coalition Force collaborative Mission Management experimentation.
 - 1500 Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) (Partner: United Kingdom): Asset Tracking Data System will allow seamless tracking and identification of US and UK materiel shipment/consignments and will significantly enhance US coalition warfare capabilities.
 - 500 Senior National Representatives (Army)/International Cooperative Opportunities Projects (Partners: France, Germany, United Kingdom, Italy): Supporting harmonization of programs at various levels; exchanging information, identifying knowledge gaps to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations.
 - 330 International Agreement Tracking System (IATS) Development and Implementation, NATO R&D Policy Development, and Report to Congress Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 2002 Report to Congress on the International Cooperative Research and Development Program.
 - 1200 Technology Research and Development Projects (Partners: United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.
 - 500 Engineer and Scientist Exchange Program (Partner: Major NATO Allies): Supports and facilitates cooperation by expanding the MOU participants' knowledge of each others' research, development and acquisition process.
- Total 8633

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	1858	1920	8594	0
Appropriated Value	1872	1920	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-50	0	0	0
c. Omnibus or Other Above Threshold Reduction	-8	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-6	-18	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	39	0
Current Budget Submit (FY 2002/2003 PB)	1808	1902	8633	0

C. Other Program Funding Summary: None

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

D. Acquisition Strategy: All projects are test or technical demonstrations to feed into potential new requirements or as product improvements (such as the Adaptive Beamforming Technology insertion project), or to introduce interoperability into existing systems (such as the Combat Identification project).

E. Schedule Profile	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Multilateral Interoperability Program (MIP)				0	0	0	0	0
Complete Lab Demo/Tests & Simulations	4Q			0	0	0	0	0
Complete C2SIP ATCD		3Q		0	0	0	0	0
Complete Integration into MCS			3Q	0	0	0	0	0
Focal Plane Array Countermeasures				0	0	0	0	0
Develop Advanced CM Model		3Q		0	0	0	0	0
Complete Testing of Advanced CM Model			3Q	0	0	0	0	0
Artillery Systems Cooperation Activity				0	0	0	0	0
Complete Phase I Operational Tests	2Q			0	0	0	0	0
Complete Phase II Tests		3Q		0	0	0	0	0
TACJAM-A				0	0	0	0	0
Complete Systems Integration	3Q			0	0	0	0	0
Complete Development Testing		4Q		0	0	0	0	0
Complete Operational Testing			3Q	0	0	0	0	0
Electro-Thermal Chemical (ETC)				0	0	0	0	0
Component Development and Testing	4Q			0	0	0	0	0
Sub-system Development and Testing		4Q		0	0	0	0	0
Fabricate ETC Gun Module			4Q	0	0	0	0	0
Complete System Test and Report				0	0	0	0	0
Intense Laser Pulse Propagation in the Atmosphere (ILPPA)				0	0	0	0	0
Component Development	4Q			0	0	0	0	0
Complete Modeling and Simulation		4Q		0	0	0	0	0
Complete Testing and Experimentation			4Q	0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Multilateral Interoperability Program (MIP)	CPFF	C3S, CSC Fort Washington, PA	0	745		700		0	0	0	0	0
b . Electro-Thermal Chemical (ETC) Gun - Munitions & Propellants	TBD	UDLP Minneapolis, MN	0	287		0		0	0	0	0	0
c . International Agreement Tracking System (IATS) - Software Development	TBD	JIL Information Systems Vienna, VA	0	217		234		0	0	0	0	0
d . Intense Laser Pulse Propagation in the Atmosphere (ILPPA) - Sensors	TBD	TBD	0	80		84		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/Total Asset Visibility (TAV) - Software	TBD	TBD	0	0		1050		0	0	0	0	0
f . Engineer-Scientist Exchange Program (ESEP)	TBD	TBD	0	0		350		0	0	0	0	0
g . TACJAM-A - Sensors	TBD	TBD	0	0		481		0	0	0	0	0
h . Focal Plane Array Countermeasures (FPACM) - Sensors	TBD	GTRI Atlanta, GA	0	0		350		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i . Techniques for Active Defense (TAD) - Missile Defense	TBD	TBD	0	0		1250		0	0	0	0	0
j . Simulation & C2 Information System Connectivity Experimentation (SINCE) - C2 Systems	TBD	TBD	0	0		280		0	0	0	0	0
k . Senior National Representatives (Army) (SNR[A])	TBD	TBD	0	0		350		0	0	0	0	0
l . TRDP	TBD	TBD	0	0		924		0	0	0	0	0
Subtotal:			0	1329		6053		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft. Monmouth, NJ	0	160		150		0	0	0	0	0
b . ETC Gun	MIPR	TACOM, Warren, MI	0	62		62		0	0	0	0	0
c . IATS	MIPR	TBD	0	47		50		0	0	0	0	0
d . ILPPA	MIPR	AMCOM, Redstone Arsenal, AL	0	18		18		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		225		0	0	0	0	0
f . ESEP	MIPR	TBD	0	0		75		0	0	0	0	0
g . TACJAM-A	MIPR	CECOM Ft. Monmouth, NJ	0	0		95		0	0	0	0	0
h . FPACM	MIPR	CECOM Ft. Monmouth, NJ	0	0		75		0	0	0	0	0
i . TAD	MIPR	AMCOM, Redstone Arsenal, AL	0	0		225		0	0	0	0	0
j . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft. Monmouth, NJ	0	0		60		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

**BUDGET ACTIVITY
4 - DEM/VAL**

**PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT
691**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . SNR(A)	MIPR	TBD	0	0		75		0	0	0	0	0
l . TRDP	MIPR	TBD	0	0		180		0	0	0	0	0
Subtotal:			0	287		1290		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	CECOM Ft Monmouth, NJ	0	106		100		0	0	0	0	0
b . ETC Gun	MIPR	Aberdeen Proving Ground, NJ	0	41		41		0	0	0	0	0
c . IATS	MIPR	TBD	0	31		33		0	0	0	0	0
d . ILPPA	MIPR	White Sands Missile Range, NM	0	12		12		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	AMSAA, Aberdeen Proving Ground, NJ	0	0		150		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

**BUDGET ACTIVITY
4 - DEM/VAL**

**PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT
691**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. ESEP	MIPR	TBD	0	0		50		0	0	0	0	0
g. TACJAM-A	MIPR	White Sands Missile Range, NM	0	0		63		0	0	0	0	0
h. FPACM	MIPR	White Sands Missile Range, NM	0	0		50		0	0	0	0	0
i. TAD	MIPR	White Sands Missile Range, NM	0	0		150		0	0	0	0	0
j. Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM Ft Monmouth, NJ	0	0		40		0	0	0	0	0
k. SNR(A)	MIPR	TBD	0	0		50		0	0	0	0	0
l. TRDP	MIPR	TBD	0	0		120		0	0	0	0	0
Subtotal:			0	190		859		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

**BUDGET ACTIVITY
4 - DEM/VAL**

**PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT**

**PROJECT
691**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MIP	MIPR	PEO C3S, Ft. Monmouth, NJ	0	53		50		0	0	0	0	0
b . ETC Gun	MIPR	PEO GCSS	0	21		21		0	0	0	0	0
c . IATS	MIPR	TBD	0	16		17		0	0	0	0	0
d . ILPPA	MIPR	AMCOM, Redstone, AL	0	6		6		0	0	0	0	0
e . Automated Identification Technology for Asset Tracking/TAV	MIPR	LOGSA	0	0		75		0	0	0	0	0
f . ESEP	MIPR	TBD	0	0		25		0	0	0	0	0
g . TACJAM-A	MIPR	PEO IEW	0	0		32		0	0	0	0	0
h . FPACM	MIPR	Army Research Lab	0	0		25		0	0	0	0	0
i . TAD	MIPR	PEO MD, Redstone Arsenal, AL	0	0		75		0	0	0	0	0
j . Simulation and C2 Information System Connectivity Experimentation (SINCE)	MIPR	CECOM, Ft. Monmouth, NJ	0	0		20		0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

June 2001

BUDGET ACTIVITY
4 - DEM/VAL

PE NUMBER AND TITLE
0603790A - NATO RESEARCH AND DEVELOPMENT

PROJECT
691

IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . SNR(A)	MIPR	TBD	0	0		25		0	0	0	0	0
1. TRDP	MIPR	TBD	0	0		60		0	0	0	0	0
Subtotal:			0	96		431		0		0	0	0
Project Total Cost:			0	1902		8633		0		0	0	0